

Angla-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2015 SCIENCE **PRIMARY FIVE BOOKLET A**

Name:		. ()	Class: Primary 5
Date:	29 October 2015			

INSTRUCTIONS TO CANDIDATES

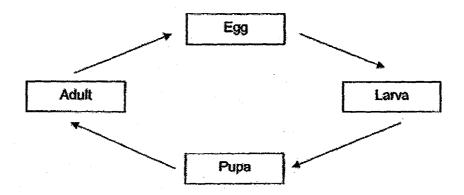
- 1. This question paper consists of 20 printed pages including this cover
- Do not turn this page until you are told to do so.
 Follow all instructions carefully.

 - 4. Answer all the questions.
 - 5. Shade your answer on the Optical Answer Sheet (OAS) provided.

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(60 marks)

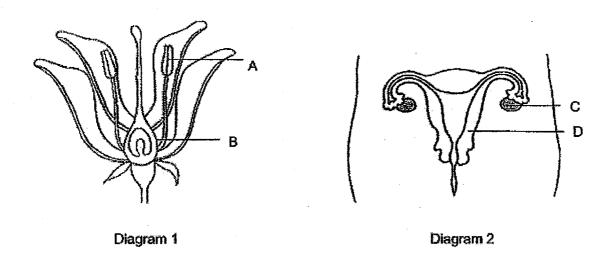
1 The diagram below shows the life cycle of an animal.



Which two animals are likely to have the life cycle as shown above?

- A Frog
- **B** Butterfly
- G Mosquito
- D Cockroach
- (1) A and B
- (2) A and C
- (3) B and C
- (4) C and D

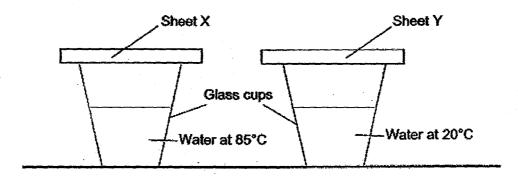
2 Mrs Teo drew diagrams 1 and 2 as shown below to represent the reproductive parts of a plant and a human respectively.



Which of the parts A, B, C and D represent the place where the eggs are produced in both species?

- (1) A and C
- (2) A and D
- (3) B and C
- (4) C and D

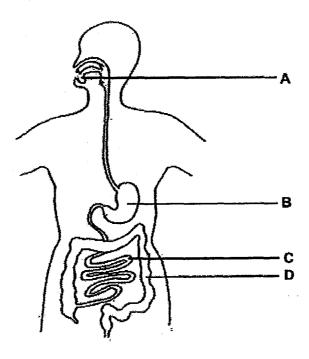
Peter filled two identical glass cups with equal amounts of water at different temperatures as shown in the diagram below. One glass cup was filled with water at 85°C while the other glass cup was filled with water at 20°C. At the start of the experiment, sheet X and sheet Y, which were made of the same material and of the same length, were placed on top of each glass cup. After a while, Sheet X became longer than Sheet Y.



Why is Sheet X longer than Sheet Y?

- (1) Sheet X expanded more than Sheet Y as more heat was transferred to Sheet X.
- (2) Sheet X contracted more than Sheet Y as more heat was transferred to Sheet X.
- (3) Sheet X expanded more than Sheet Y as less heat was transferred to Sheet X.
- (4) Sheet X contracted more than Sheet Y as proceed was transferred to Sheet X.
- 4 Which two characteristics below can be passed on from parents to their young?
 - A Length of hair
 - B Detached earlobes
 - G Ability to roll tongue.
 - D Length of finger nails
 - (1) A and B
 - (2) B and C
 - (3) C and D
 - (4) B and D

5 The diagram below shows the human digestive system.



At which part does digestion begin?

- (1) A
- (2) B
- (3) C
- (4) D
- Which of the following about the functions of the different human body systems is correct?

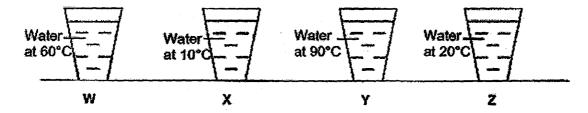
-	System involved in gaseous exchange with the surrounding	System involved in transporting substances around the body	System involved in breaking down food into simple substances
(1)	Muscular system	Respiratory system	Digestive system
(2)	Respiratory system	Circulatory system	Digestive system
(3)	Circulatory system	Respiratory system	Muscular system
(4)	Respiratory system	Transport system	Circulatory system

7 Dennis studied organism A which is shown below.



He classified organism A as an insect. What is a common characteristic between organism A and birds?

- (1) They have three body parts.
- (2) Their young look like the adults.
- (3) They reproduce by laying eggs.
- (4) They have the same type of body covering.
- Four similar cups, W, X, Y and Z, were each filled with 50 ml of water at different temperatures and placed in the same room at 30°C as shown in the diagram below.

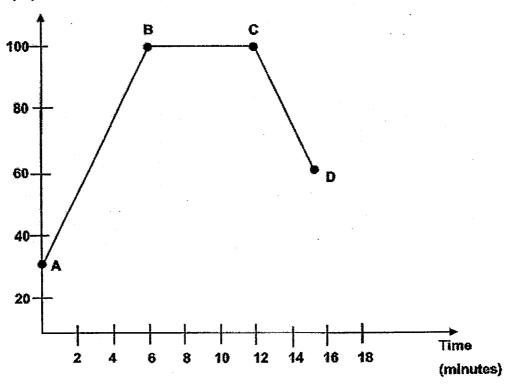


Which cups would have water droplets forming on their outer surfaces after some time?

- (1) Wand Yonly
- (2) X and Z only
- (3) W, X and Y only
- (4) W, X and Z only

Norliza heated some water in a beaker until it boiled. She continued to allow the water to boil for some time. It was then left on a table to cool. She recorded the results in the graph as shown below.

Temperature (°C)



Which of the following statements below correctly explain what happened to the water at the different stages?

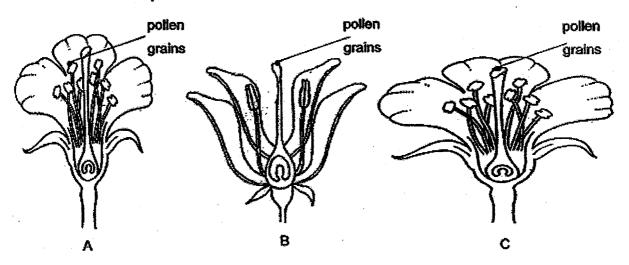
- A Heat is gained during A to B.
- B Evaporation takes place from C to D only.
- C Water exists in two states between B and C.
- D The water took six minutes before it started boiling.
- (1) A and B only
- (2) B and C only
- (3) C and D only
- (4) A, C and D only

- Which one of the following statements is <u>not true</u> about the water cycle?
 - (1) Water evaporates to form clouds.
 - (2) The water cycle takes place all the time.
 - (3) Condensation is one of the processes of the water cycle.
 - (4) Water droplets fall from the clouds as rain, snow or hailstones.
- 11 The following statements are suggestions on how water can be conserved.
 - A NEWater is made by purifying waste water.
 - B Collect water used for rinsing clothes to flush the toilet.
 - C When washing a car, use a pail of water instead of using a hose.
 - D Use a cup of water when brushing teeth instead of letting the tap run.

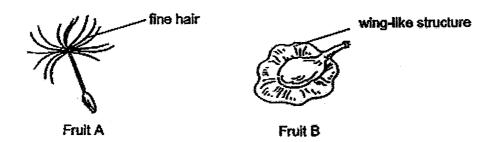
Which of the statement(s) above is/are an example of how water can be recycled?

- (1) A only
- (2) Conly
- (3) A and B only
- (4) B, C and D only

Mrs Tan put some pollen grains on one part of flowers A, B and C. If the black dots in the flowers below represent the pollen grains that were put, which of the following flower(s) would most likely develop into fruits if all the conditions were favourable for fruits to develop?



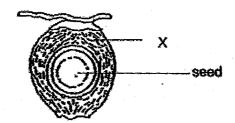
- (1) A only
- (2) A and B only
- (3) B and C only
- (4) A and C only
- 13 Compare the two fruits shown in the diagram below.



Based on the information given, which one of the following correctly describes Fruit A and Fruit B?

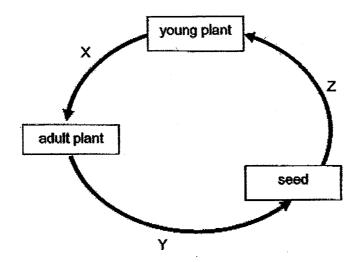
- (1) Fruit A and Fruit B are dispersed by wind.
- (2) Fruit A and Fruit B are dispersed by water.
- (3) Fruit A and Fruit B are dispersed by splitting.
- (4) Fruit A and Fruit B are dispersed by animals.

The diagram below shows the cross-section of a fruit. The fruit is able to float on water but when part X of the fruit has been removed, the fruit sank in water. What can you infer about part X?



- (1) X is thick and fluffy.
- (2) X protects the seed.
- (3) X is hairy and prickly.
- (4) X has a fibrous husk that traps air.
- 15 . Which of the following organisms reproduce from spores?
 - A Ferns
 - B Mushroom
 - C Bread mould
 - D Papaya plant
 - (1) A and D only
 - (2) B and C only
 - (3) B, C and D only
 - (4) A, B and C only

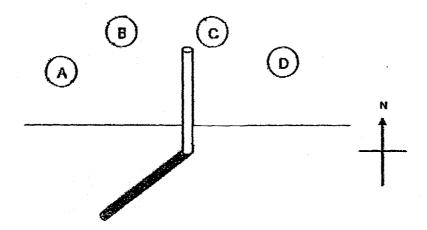
16 The diagram below shows the life cycle of a plant.



Which of the letters, X, Y or Z, represent the processes of fertilisation and germination respectively?

•	Fertilisation	Germination
(1)	X	Y
(2)	Х	Z
(3)	Υ	х
(4)	Y	Z

17 The shadow cast by a pole placed under the sun is as shown in the diagram below.

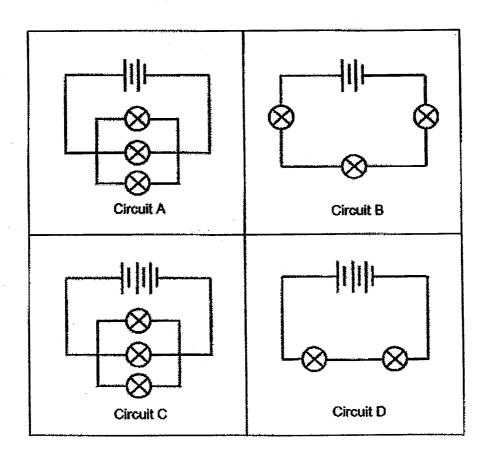


Which letter, A, B, C or D, represents the most likely position of the sun?

- (1) A
- (2) B
- (3) C
- (4) D

Study the four electric circuits A, B, C and D as shown in the diagrams below.

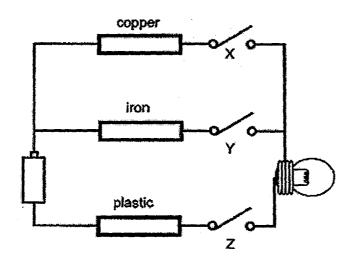
The bulbs and the batteries in the four electric circuits are identical and in working conditions. All the bulbs in the four electric circuits lit up.



Which one of the following correctly shows the brightness of the bulbs arranged from the dimmest to the brightest?

- (1) A, D, B, C
- (2) B D.A.C
- (3) C, A, D, B
- (4) D, B, A, C

- Which of the following statement(s) is/ are the possible reason(s) for us to conserve electricity?
 - A Using too much electricity may cause a fire at home.
 - B The fossil fuel needed to generate electricity is limited.
 - C Burning fossil fuel to generate electricity pollutes the environment.
 - (1) A only
 - (2) A and C only
 - (3) B and C only
 - (4) A, B and C
- 20 Zach set up an electrical circuit as shown below.



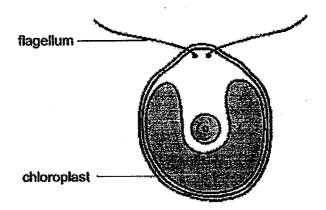
He closed two switches at a time as shown in the table below and observed whether the bulb light up.

Combination	Switches that are closed		
Α	X and Y		
В	X and Z		
C	Y and Z		

Which combination(s) will light up the bulb?

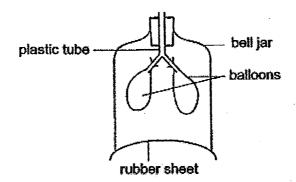
- (1) A only
- (2) A, B and C
- (3) B and C only
- (4) None of the combination

The diagram below shows a single-celled organism which lives in a pond and moves around using its part called the flagellum.



Based on the diagram above, what is the most likely method of obtaining food for this single-celled organism?

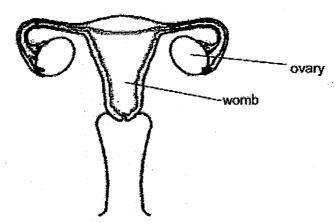
- (1) It makes its own food through photosynthesis.
- (2) It feeds on other organism in the water for food.
- (3) It absorbs the food in the water through its cell membrane.
- (4) It does not need to obtain food as it has stored food in the cell.
- The diagram below shows a lung model.



Which parts of the human respiratory system can be correctly represented by this model?

	Plastic tube	Bell jar	Balloons	Rubber sheet
(1)	Gullet	Lungs	Stomach	Lungs
(2)	Windplpe	Ribcage	Lungs	Diaphragm
(3)	Windpipe	Lungs	Stomach	Stomach
(4)	Gullet	Ribcage	Lungs	Diaphragm

23 The diagram below shows the front view of the female reproductive system.

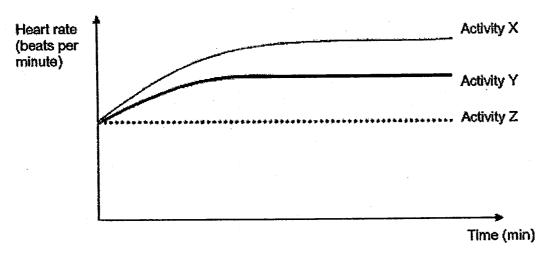


Female reproductive system (Front view)

Which of the following statement(s) about the female reproductive system is/are true?

- A The foetus develops in the womb.
- B The foetus first develops in the ovary
- C Fertilization takes place in the ovary.
- D The sperm will be deposited in the womb.
- (1) A only
- (2) C only
- (3) B and C only
- (4) A, B and D only
- 24 Which one of the following shows the pathway of how oxygen enters the body?
 - (1) Nose →gullet→heart→ other parts of the body
 - (2) Nose → lungs→heart→ otherparts of the body
 - (3) Nose → windpipe → heart → lungs → other parts of the body
 - (4) Nose → windpipe → lungs → heart →other parts of the body

25 The graphs below show Ron's heartbeat when he performs three different activities.

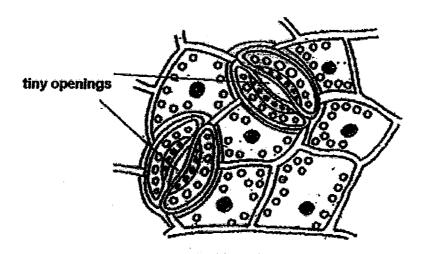


Which of the following activities best fits the graphs above?

	Activity X	Activity Y	Activity Z
(1)	Sleeping	Walking	Running
(2)	Running	Sleeping	Walking
(3)	Walking	Sleeping	Running
(4)	Running	Walking	Sleeping

- 26 Which of the following are transported around the body by the circulatory system?
 - A Heat
 - B Water
 - C Oxygen
 - D Digested food
 - (1) A and B only
 - (2) C and D only
 - (3) B, C and D only
 - (4) A, C and D only

27 John observed the underside of the leaf and saw many tiny openings as shown in the diagram below.



Which two of the following statement(s) below are true about these tiny openings?

- A It allows gaseous exchange in the day only.
- B It allows water vapour to escape the leaves.
- C It allows gaseous exchange in the day and night.
- D It allows water vapour to enter for photosynthesis.
- (1) A and B
- (2) A and D
- (3) B and C
- (4) B and D

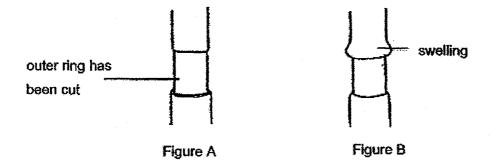
The table below shows the composition of gases in inhaled and exhaled air of a human.

Gases	Inhaled air	Exhaled air
Oxygen	21 units	18 units
Carbon dioxide	0.03 unit	1 unit

Based on the results in the table above, what can be inferred?

- A There is more oxygen in inhaled air than exhaled air.
- B There is more oxygen than carbon dioxide in inhaled air.
- C There is more carbon dioxide than oxygen in exhaled air.
- D There is more carbon dioxide in exhaled air than in inhaled air.
- (1) A and B only
- (2) B and C only
- (3) A and D only
- (4) A, B and D only

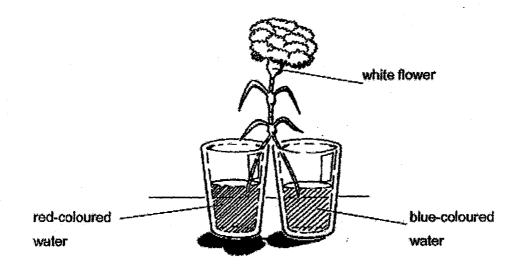
29 Keith cut the outer ring of the stem of a plant as shown in Figure A below.



Two days later, a swelling was observed only above the cut region as shown in Figure B above. Which one of the following statements best explains the swelling?

- (1) Food had accumulated above the cut region.
- (2) Water had accumulated above the cut region.
- (3) Roots were starting to grow out from the swollen part.
- (4) The plant was injured more at the region above the cut region.

30 Lee set up an experiment using a plant with white flower as shown in the diagram below. He split the stem of the plant in half and submerged each half into a beaker of water of different colour. One half was placed in red-coloured water while the other half was placed in blue-coloured water.



What happened to the flower?

- (1) The flower remained white as the colours were not transported in the watercarrying tubes.
- (2) The flower became purple as the colours were mixed in the water-carrying tubes before it reached the flower.
- (3) The flower became half red and half blue as the water-carrying tubes transported the coloured water separately.
- (4) The flower became half red and half blue as the food-carrying tubes transported the coloured water separately.

End of Booklet A
Please go to Booklet B



Angla-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2015 SCIENCE PRIMARY FIVE BOOKLET B

Name	*	.()	Class: Primary 5
Date:	29 October 2015			Duration of paper: 1 h 45 mir
	•			Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

- 1. This question paper consists of <u>15</u> printed pages including this cover page.
- 2. Do not turn this page until you are told to do so.
- 3. Follow all instructions carefully.
- 4. Answer all the questions in this booklet.

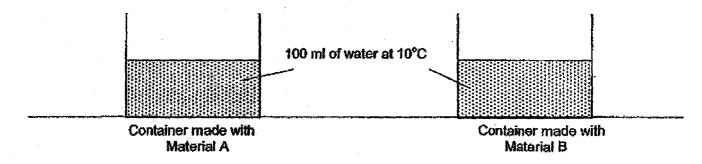
BOOKLET	MAXIMUM MARKS	MARKS OBTAINED
A	60	1000
В	40	
Total	100	

For questions 31 to 44, write your answers in the spaces provided in the booklet.

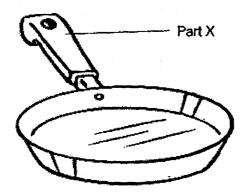
The number of marks available is shown in brackets [] at the end of each question or part question.

(40 marks)

Mrs Lim carried out an experiment and used containers of the same shape and capacity. They were each filled with 100 ml of water at 10°C at the same time. The containers of water were heated and the temperature of the water was taken every five minutes. The readings were recorded in the table below.



	Temperature of the water after				
	5 min	10 min	15 min	20 min	
Material A	15°C	21°C	26°C	29°C	
Material B	12°C	14°C	17°C	20°C	



Based on the results above, which material, A or B, is more suitable for making Part X of the frying pan above? Explain your answer.

[2]

Johnny conducted an experiment to compare the rates of evaporation of liquids A, B, C and D. He poured 10 ml of each liquid into four identical glass beakers. He placed the four beakers inside a cupboard and measured the time taken for each liquid to evaporate completely. His results are shown below.

Liquid	Α	В	C	D
Time taken for				
liquid to				
evaporate	3	4	6	5
completely			-	
(hour)				

(a) Complete the table below by putting A, B, C and D in the correct order from the liquid that had the slowest rate of evaporation to the liquid with the fastest rate of evaporation.

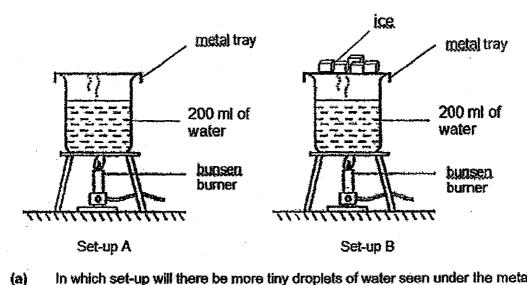
[1]

	Slowest rate of	Fastest rate of	
•	evaporation	evaporation	
Liquid			

(b)

If he placed all the liquids next to a blowing fan, how will this affect the rate of

33 Set-up A and Set-up B were filled with equal amounts of water and were heated as shown in the diagrams below. Ice-cubes were placed on the metal tray of Set-up B only.



In which set-up will there be more tiny droplets of water seen under the metal tray? How are the tiny water droplets formed?

[2]

Metal tray

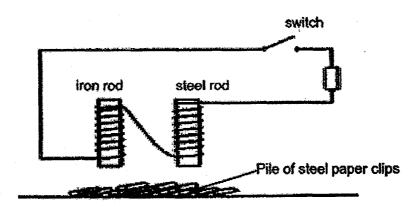
water

bunsen
burner

Set up B

(b) If more ice were added on the metal tray in set-up B, explain how this will affect the amount of water droplets formed. [1]

34 Ali wanted to find out how the strength of an electromagnet will be affected by the different materials used in the electromagnet. He prepared the set-up as shown below.



The two rods were placed above a pile of steel paper clips before the switch was closed. When the switch was closed, the paper clips were attracted to the two rods. The number of paper clips attracted to each rod was as shown in the table below.

Trial	Number of paper clips iron rod attracted	Number of paper clips steel rod attracted
1 st	10	8
2 nd	11	7
310	9	7

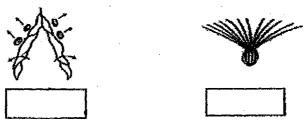
<u> </u>	
	sed on the results shown in the table above, which material can make a
stro	onger electromagnet? Explain.
	·
If or	ne more battery in series arrangement was added to the circuit, will the
	ne more battery in series arrangement was added to the circuit, will the
	ne more battery in series arrangement was added to the circuit, will the sattract more or less paper clips? Explain.
rod	s attract more or less paper clips? Explain.
Ali	s attract more or less paper clips? Explain. would like both the rods to attract more paper clips. Suggest another way
Ali	would like both the rods to attract more paper clips. Suggest another way which he can do this. Do not mention what has been described in (b)

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Rachel counted the number of two different types of young plants, X and Y at various distances from their parent plants in a garden. The results are shown in the table below.

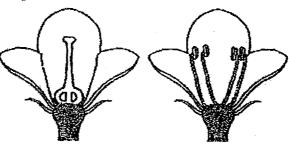
Type of plant	Distance from parent plant (metres)	Number of young plants
Х	1	10
Y	8	2

(a) Which one of the following was likely to be the fruit of Plant X? Choose your answer and tick (√) the appropriate box accordingly.



(b) Explain your answer. [2]

Study the diagram below which shows Flower A and Flower B.



Flower A Flower B

(c) Using only the Information from the diagram above, determine if each of the following statements is 'true' or 'false' by putting a tick (√) in the appropriate boxes.

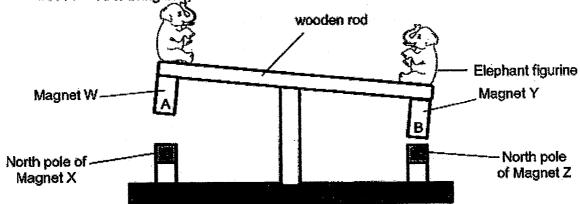
Statement	True	False
Only Flower B can become a fruit.		
Only Flower A can become a fruit.		

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[1]

[1]

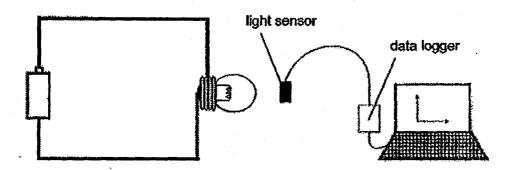
Wei Jie designed a toy see-saw using magnets and elephant figurines as shown in the diagram below. The toy would move continuously after he tilted one end of the wooden rod to bring magnets W and X nearer to one another.



2]
1]

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37 Ameen wanted to find out if the number of batteries in series arrangement would affect the brightness of the bulb produced. A data logger with light sensor was placed five cm away from the bulb to measure its brightness as shown in the diagram below.



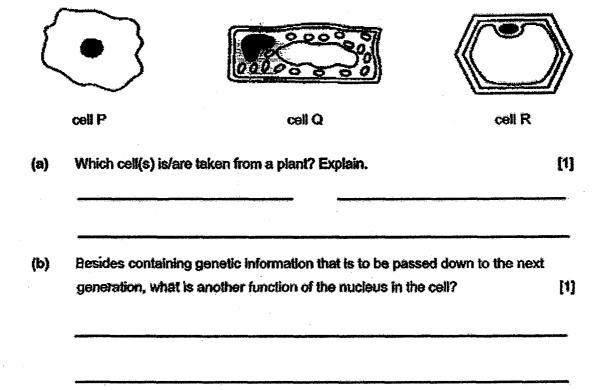
Ameen then recorded his results in the table below.

Number of batteries in series arrangement	Reading in the data logger (units)	
0	300	
1	375	
2	450	
3	525	

was no battery connected in the circuit. Suggest a possible reason for this
observation.

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Score

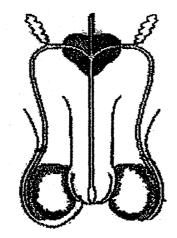
38 Study the three different cells shown below.



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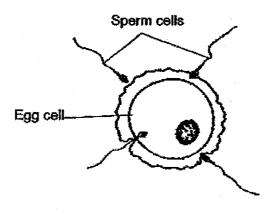
Δ----

39 The diagram below shows the male human reproductive system.



Male human reproductive system (Front view)

(a) Identify and label the part(s) that produce(s) the sperm cells on the diagram above. [1]



The diagram above shows sperm cells trying to fertilise the egg cell.

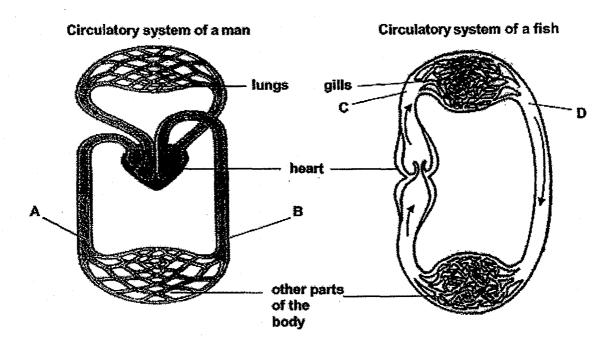
(b) How many sperm cell(s) is/are needed to fertilise the egg cell successfully? [1]

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Score

2

40 The diagram below represents the circulatory system of a man and a fish.



(a)	State how the function of the lungs and the gills are similar.	[1]
	-	
	·	
		متندست بنسمي

(b) Indicate which gas is higher in amount at the different parts of the circulatory system of a man and a fish in the table below by putting a tick (√) in the correct boxes.

	Blood vessel	Higher amount of oxygen	Higher amount of carbon dioxide
Circulatory	Α		
system of a man	В		
Circulatory	С		
system of a fish	D		

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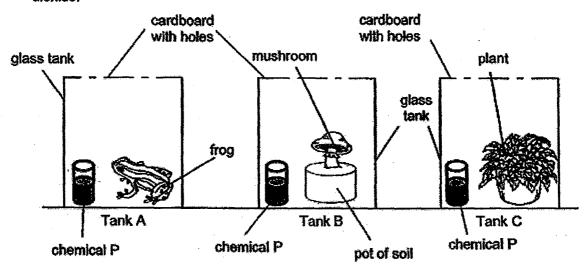
A study was conducted to find out if different groups of people had different heart rates when they were at rest. All the participants of this study were 21 years old. For each participant, the heart rate was taken three times and the average was calculated. The results were recorded in the table below.

	Heart rate (Beats per minute)		Avèrage heart rate at rest	
	Reading 1	Reading 2	Reading 3	(Beats per minute)
Male athlete	55	50	51	52
Female athlete	55	60	56	57
Male non-athlete	73	71	72	72
Female non-athlete	78	84	75	79

Based on the results in the table above, what can you conclude about the difference in the average heart rate between the athletes and non-athletes when they were at rest?	[1]
What can you conclude about the difference in the average heart rate between males and females when they were at rest?	[1]
Why must the heart rate reading be taken three times?	[1]
	difference in the average heart rate between the athletes and non-athletes when they were at rest? What can you conclude about the difference in the average heart rate between males and females when they were at rest?

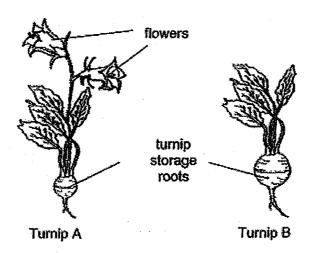
(Go on to the next page)
Score

The diagrams below show three glass tanks placed in the garden on a sunny day for six hours. The organisms were alive at the start of the experiment. Chemical P will change from red to yellow when there was an increase in the amount of carbon dioxide.



(a)	Based on the diagram above, in which Tank(s) will the chemical P turn from red to yellow after six hours?	[1]
		
(b)	Explain the answer you have given in (a).	[1]

The flowers of turnips in a farmer's farm were blooming and the farmer decided to cut away some of the flowers. During harvest, the farmer observed that the mass of the storage roots with or without flowers were very different even though the plants were planted at the same time. The diagrams below show the two turnips he harvested.



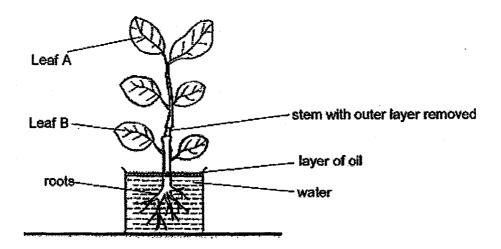
The leaves and stems were removed and the mass of each storage root was measured and recorded in the table below.

Turnip	Mass of the turnip storage root (g)		
Α	130		
В	280		

difference in mass for the turnip storage roots with and without flowers.	[2]

(Go on to the next page)

Larry set up the experiment as shown in the diagram below. He carefully removed only the outer layer of the stem. He left the plant near an open window for five days.



Based on the diagram and information given above, put a tick ($\sqrt{}$) in the appropriate boxes to indicate if each statement is true or false.

[2]

Statements	True	False
Leaf B will be able to receive the water from the roots but not leaf A.		
Only leaf A will be able to continue to photosynthesize.		
Only leaf B will continue to photosynthesize.		
The roots will die as it does not receive food made by the leaves.		

End of Booklet B

Check your answers carefully.

• . • . - '-•

Answer Key

EXAM PAPER 2015

SCHOOL: ACS

SUBJECT: P5 SCIENCE

TERM: SA2

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Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	3	1	2	1	2	3	2	4	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
1,	3	1	4	4	4	4	2	3	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
1	2	1	4	4	3	3	4	1	3

ACS (P) Science Answer Key P5 SA2 2015

No.	Answer key				
31	Material B. Material B is a poorer conductor of heat [1] as the temperature of Material B is cooler in 20 minutes than Material A. [1]				
32(a)	CDBA [1]				
32(b)	The rate of evaporation will be faster for all liquids. [1] because the wind will pro-				
	away the water vapour faster [1]				
32(c)	All beakers must also have the same exposed surface area [1].				
33(a)	Set-Up B. As the warmer water vapour [0.5] touches the cooler surface of the metal				
	tray [0.5], lost heat [0.5] the water vapour condenses [0.5] on the metal tray to form				
	tiny water droplets.				
33(b)	The metal tray lose more heat and became even cooler [1] so, rate of condensation				
	increased. Therefore, more the amount of water droplets formed.[1]				
34(a)	Iron rod, the iron rod electromagnet <u>attracted more paper clips than the steel rod</u> electromagnet. [1]				
34(b)	More paper clips. The more batteries there are, the more electricity [1], the stronger the electromagnet[1].				
34(c)	Increase the number of coils [1] around the rods.				
35(a)	Partial mark ½ if label as (plant X) instead. Not following instruction.				
	Partial mark 72 is label as (plant A) isstead. Not following instruction.				
35(b)	More young of plant X can be found nearer to the parent plant [1]. Therefore it must be dispersed by splitting/explosive action. [1].				
35(c)	F [0.5], T [0.5]				
36(a)	A: North pole [0.5], B: North pole [0.5]				
36(b)	When one end tilts downward to the right, the magnet Z repels Magnet Y [0,5] and the rod will tilt to the left/tilt to the other side [0,5]. Magnet X repels Magnet W [0,5] and tilt the rod back to the right side again [0,5].				
36(c)	Magnet Z repels magnet Y[1]				
37(a)	As the number of batteries in series arrangement increases, the brightness of bulb increases, [1]				

37(b)	The data logger detected and measured the brightness of the room. [1]					
37(c)	The bulb had fused. [1]					
38(a)	Cell Q and R. Both cells have cell wall/regular or fixed shape. [1]					
38(b)	Control (all) cell activities in the cell [1]					
39(b)	One/1 only [1]					
40(a)	Both organs are used for gaseous exchange [1].					
40(b)	Blood vessel	Higher amount of oxygen.	Higher amount of carbon dloxide.			
	A					
	<u> </u>	V .				
	C D		1			
41(a) 41(b)	Athlete has a slower heart rate/heart beat per minute than non-athlete. [1] Males have a lower heart rate than females. [1]					
41(c)	To find the average heart rate [0.5] and ensure the results are reliable [0.5].					
42(a)	Tanks A and B [1]					
42(b)	All the 3 living things respire and give out more carbon dioxide BUT the plant use the carbon dioxide to make food [1]					
43	In turnip A, the <u>food made by the leaves/during photosynthesis [0.5]</u> were <u>transported to the roots and the flower [0.5]</u> , while in turnip B, the food made is <u>only transported to the roots [0.5]</u> to be stored. Therefore turnip B can <u>store more food [0.5]</u> and become bigger.					
44	F [0.5] F [0.5] F [0.5]					